10/643,090

## **EAST Search History**

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	255	(556/110).CCLS.	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2007/02/12 18:43

## 10/643,090

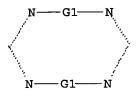
(FILE 'HOME' ENTERED AT 14:24:30 ON 12 FEB 2007)

FILE 'REGISTRY' ENTERED AT 14:24:40 ON 12 FEB 2007 STRUCTURE UPLOADED

=> d l1

L1

L1 HAS NO ANSWERS



G1 Ag, Au, Cu

Structure attributes must be viewed using STN Express query preparation.

=> s l1 full FULL SEARCH INITIATED 14:25:10 FILE 'REGISTRY' FULL SCREEN SEARCH COMPLETED -37064 TO ITERATE

100.0% PROCESSED 37064 ITERATIONS 809 ANSWERS

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=> fil caplus COST IN U.S. DOLLARS

TOTAL SINCE FILE SESSION ENTRY 172.31 172.10

FULL ESTIMATED COST

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=> s 12

L3

303 L2

=> s 13 and py<2003 22869379 PY<2003

L4 228 L3 AND PY<2003

=> s 14 and thin films

593662 THIN 811709 FILMS

149945 THIN FILMS

(THIN (W) FILMS)

L5 0 L4 AND THIN FILMS

=> s 14 and CVD

70280 CVD

L6 1 L4 AND CVD

=> d bib abs

L6 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2007 ACS on STN

AN 2001:747167 CAPLUS

DN 135:273081

TI Preparation of metal volatile precursors for deposition of metals and metal-containing films

IN Morman, John Anthony Thomas; Roberts, David Allen; Farnia, Morteza

PA Air Products and Chemicals, Inc., USA

SO Eur. Pat. Appl., 21 pp.

CODEN: EPXXDW

DT Patent

LA English

FAN.CNT 2

GI

	PATENT NO.			KIND		DATE		API	APPLICATION NO.				DATE			
ΡI	EP 1142	P 1142894 P 1142894		A2 20011010 A3 20030423		EP 2001-108053				20010329 <			< <sub>.</sub>			
	EP 1142 R:	AT, B	E, CH, I, LT,		DK,			GB, GI	R, IT,	LI,	LU,	NL,	SE,	MC,	PT,	
	US 2002	2013487	1, 11,	Al	Ī	2002				79140				00102		
	TW 4909			B T		2002 2005				-90107 -10805				00103 00103		<
	JP 2002			A		2002		JP	2001	-10454	4.		20	00104	103	<
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AB This invention is directed to a group of novel homologous eight membered ring compds. I having a metal, such as copper, reversibly bound in the ring and containing carbon, nitrogen, silicon and/or other metals. A

structural representation of the compds. I (M, M' = Cu, Ag, Au, Ir; X, X' = N, O; Y, Y' = Si, C, Sn, Ge, B; Z, Z' = C, N, O; substituents represented by R1, R2, R3, R4, R5, R6, R7, R8, R9, R10, R11, R12 will vary depending on the ring atom to which they are attached). This invention is also directed to depositing metal and metal-containing films on a substrate, under ALD or CVD conditions, using the above novel compds. as precursors. Thus, reaction of dimethylaminochloromethyldimethylsilane with Mg in THF followed by treatment with cuprous chloride gave [-CunMe2SiMe2CH2CunMe2SiMe2CH2-].

=> s 14 and copper 923086 COPPER 188 L4 AND COPPER L7 => s 17 and amidinate 326 AMIDINATE 1 L7 AND AMIDINATE 1.8 => d bib abs ANSWER 1 OF 1 CAPLUS COPYRIGHT 2007 ACS on STN L8 AN1997:314951 CAPLUS DN 127:5420 Living Polymerization of Carbodiimides Initiated by Copper(I) TI and Copper(II) Amidinate Complexes Shibayama, Koichi; Seidel, Scott W.; Novak, Bruce M. ΑU Department of Polymer Science and Engineering, University of CS Massachusetts, Amherst, MA, 01003, USA SO Macromolecules (1997), 30(11), 3159-3163 CODEN: MAMOBX; ISSN: 0024-9297 PB American Chemical Society DT Journal LA English AΒ Robust catalysts based on copper(I) and copper(II) amidinate complexes initiate living polymerization of carbodiimide. The tolerance of these complexes to impurities is illustrated by the fact that they cleanly initiate the polymerization of carbodiimides under air and oxygen. They are even active in the presence of water, but both mol. wts. and yields tend to be lower than in dry solvents. The catalytic activity of a copper(II) amidinato complex is almost equal that of reported titanium(IV) initiators. Both oxidation states are active, but Cu(II) complexes are more active in terms of rates of reaction. Regardless of the oxidation state of the initial complex, all polymns. run in the presence of oxygen proceed through the Cu(II) oxidation state. Mechanistic studies indicate that the carbodiimides insert into one of the copperamidinate bonds, thus becoming the end group of the growing polymer chain. The resultant polycarbodiimides from bulk polymns. were isolated, after dissolving to toluene, by precipitation into excess methanol, and lyophilization from benzene, as a spongy white solid. Anal. of these systems by gel permeation chromatog.-light scattering measurements (GPC-LS) and preliminary kinetic anal. suggest this system to be living.

Polycarbodiimides adopt extended-chain, helical conformations; data from X-ray scattering studies and mol. modeling indicate that polycarbodiimides

scattering data indicate that this extended-chain conformation persists in

RE.CNT 22 THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS RECORD ALL CITATIONS AVAILABLE IN THE RE FORMAT

display a 6/1 helix in the solid state, and viscometry and light

=> s 14 and gold 240181 GOLD

solution

=> d 1-8 bib abs

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L9 ANSWER 1 OF 8 CAPLUS COPYRIGHT 2007 ACS on STN
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AN 2000:119017 CAPLUS

DN 132:245405

TI One-dimensional metal string complexes

AU Peng, Shie-Ming; Wang, Chih-Chieh; Jang, Yih-Lih; Chen, Yu-Hua; Li, Feng-Yin; Mou, Chung-Yuan; Leung, Man-Kit

CS Department of Chemistry, National Taiwan University, Taipei, 106, Taiwan

SO Journal of Magnetism and Magnetic Materials (2000), 209, 80-83 CODEN: JMMMDC; ISSN: 0304-8853

PB Elsevier Science B.V.

DT Journal

LA English

AB Metal string complexes with different metal ions and various lengths were successfully synthesized and structurally characterized. The crystal and mol. structure of nonanickel complex [Ni9( $\mu$ 9-peptea)4Cl2] which is the longest metal string at this moment is reported. Crystal data for [Ni9( $\mu$ 9-peptea)4Cl2](C2H4Cl2)10: monoclinic, space group C2/c, a 27.0453(6), b 42.6678(5), c 37.4268(6) Å,  $\beta$  109.539(1)°, V = 40702(1) Å3, Z = 12, RF = 12% for the observed reflections (I > 2 $\sigma$ (I)). The band structure calcn. of infinite 1-dimensional metal chains of NiII and CrII based on the structure of nonanickel complex will be presented. Finally, the metal string complexes [MnIIL4X2] will be chemisorbed on the Ag or Au surface and the potential application of these complexes as a mol. metal wire will be demonstrated.

RE.CNT 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 2 OF 8 CAPLUS COPYRIGHT 2007 ACS on STN

AN 1995:278857 CAPLUS

DN 122:95255

TI A luminescent heterometallic Aul···Cul complex. Spectroscopic properties and crystal structures of [Au(PPh3)(C7H5N2)] and [ $\{Au(PPh3)(\mu-C7H5N2)Cu(\mu-C7H5N2)\}2$ ] (C7H5N2 = 7 azaindolate)

AU Chan, Chi-Keung; Guo, Chun-Xiao; Cheung, Kung-Kai; Li, Dan; Che, Chi-MIng

CS Dep. Chem., Univ. Hong Kong, Hong Kong, Hong Kong

SO Journal of the Chemical Society, Dalton Transactions: Inorganic Chemistry (1994), (24), 3677-82 CODEN: JCDTBI; ISSN: 0300-9246

PB Royal Society of Chemistry

DT Journal

LA English

AB The mono- and tetra-nuclear complexes [Au(PPH3)(C7H5N2)] (1) and [{Au(PPh3)( $\mu$ -C7H5N2)Cu( $\mu$ -C7H8N2)}2] (2), the latter containing 7-azaindolate (C7H5N2-) bridging ligands, have been prepared and their crystal structures determined The intramol. Au···Cu and Cu···Cu sepns. in 2 are 3.0104(6) and 2.941(1) Å resp. Extended-Hueckel mol.-orbital calcns. revealed a weak Aul···Cul bonding interaction but on Cul···Cul interaction. In MeCN, both complexes display intense intraligand emission at 510 nm upon photoexcitation with UV/visible light at room temperature. In the solid state 2 shows an emission at 550 nm.

- L9 ANSWER 3 OF 8 CAPLUS COPYRIGHT 2007 ACS on STN
- AN 1991:54777 CAPLUS
- DN 114:54777
- TI Ag2[PhC(NSiMe3)2]2 and Au2[PhC(NSiMe3)2]2: amidinato complexes with short metal-metal distances
- AU Fenske, Dieter; Baum, Gerhard; Zinn, Alfred; Dehnicke, Kurt
- CS Inst. Anorg. Chem., Univ. Karlsruhe, Karlsruhe, D-7500, Germany

SO Zeitschrift fuer Naturforschung, B: Chemical Sciences (1990), 45(9), 1273-8
CODEN: ZNBSEN; ISSN: 0932-0776

DT Journal

LA German

AB M2[PhC(NSiMe3)2]2 (M = Ag, Au) were prepared by the reaction of PhC(NSiMe3) [N(SiMe2)2] with AgO2CCH3, and ClAuCO, resp., in MeCN suspensions. Both complexes were characterized by IR spectroscopy and X-ray structure detns.: triclinic, space group P.hivin.1, Z = 2. Ag2[PhC(NSiMe3)2]2: a 1132.5(5), b 1221.4(6), c 1407.9(8) pm,  $\alpha$  107.85(3),  $\beta$  106.63(4),  $\gamma$  91.54(3)°, R = 0.023. Au2[PhC(NSiMe3)2]2: a 1119.6(6), b 1219.0(8), c 1391.7(9) pm,  $\alpha$  108.74(4),  $\beta$  106.70(5),  $\gamma$  91.49(4)°; R = 0.04. The compds., which are isotypical, form dimeric mols. with short metal-metal contacts of Ag...Ag = 265.5(2) and Au...Au = 264.6(2) pm and 2 chelating amidinato ligands with Ag-N bond lengths of (averaged) 212.4(2) pm and Au-N bond lengths of 206.0(7) pm.

L9 ANSWER 4 OF 8 CAPLUS COPYRIGHT 2007 ACS on STN

AN 1989:515296 CAPLUS

DN 111:115296

TI N,N,N'-Tris(trimethylsilyl)organoamidine as reagents in complex chemistry

AU Dehnicke, Kurt; Ergezinger, Christina; Hartmann, Eva; Zinn, Alfred; Hoesler, Klaus

CS Fachbereich Chem., Univ. Marburg, Marburg, D-3550, Fed. Rep. Ger.

SO Journal of Organometallic Chemistry (1988), 352(1-2), C1-C4 CODEN: JORCAI; ISSN: 0022-328X

DT Journal

LA German

OS CASREACT 111:115296

GI

AB N,N,N'-Tris(trimethylsilyl)phenylamidines, PhC(NSiMe3)[N(SiMe3)2], react with many main group element and transition metal halides to give mainly organoamidinato complexes I (e.g., M = Al, Ga, In, Sn, Sb, Bi, Se, Te, Ti, Zr, Hf, Nb, Ta, W, Cu, Au, n = 2, 3, 4).

L9 ANSWER 5 OF 8 CAPLUS COPYRIGHT 2007 ACS on STN

AN 1987:598598 CAPLUS

DN 107:198598

TI η3-Allylrhodium complexes with azolate ligands. Crystal structures of the trinuclear 1,2,4-triazolate complexes tris[di-η-allyl-μ-(1,2,4-triazolato-N2N4)-rhodium] and 1,1-di-η-allyl-2,2,3,3-tetracarbonyl-1,2-μ-chloro-3-chloro-μ3-1,2,4-triazolato-N1N2N4-trirhodium-1,2-dichloroethane (2/1)

AU Oro, Luis A.; Pinillos, M. Teresa; Tejel, Cristina; Foces-Foces, Concha; Cano, Felix H.

CS Inst. Cienc. Mater. Aragon, Univ. Zaragoza, Zaragoza, 50009, Spain

SO Journal of the Chemical Society, Dalton Transactions: Inorganic Chemistry (1972-1999) (1986), (10), 2193-200 CODEN: JCDTBI; ISSN: 0300-9246

DT Journal

## \* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

Rh3( $\mu$ -L)3( $\eta$ 3-C3H5)6 [L = tetrazolate (I; ttz), 1,2,4-triazolate AB (II; tz), benzotriazolate, or imidazolate] were prepared by reaction of Rh(acac)  $(\eta_3$ -C3H5)2 (acac = acetylacetonate) with azoles HL. A single crystal x-ray diffraction study on complex II showed trinuclear complexes in which each rhodium atom is bridged by the 1,2,4-triazolate ligands through the nonadjacent nitrogen atoms to form a multiat. ring. Complexes I and II react with  $[Rh2(\mu-Cl)2(CO)4]$  to give trinuclear complexes [Rh3( $\mu$ 3-L)( $\mu$ -Cl)Cl( $\eta$ 3-C3H5)2(CO)4] [L = tz (III) or ttz]. crystal structure of complex III showed trinuclear mols. in which a chlorine atom and a triazolate bridge Rh(CO) 2 and  $Rh(\eta 3-C3H5)$  2 moieties; in addition the remaining nitrogen atom of the triazolate ligand completes the square planar coordination of a RhCl(CO)2 unit. Complex II reacts with  $[Rh2(\mu-C1)2(\eta3-C3H5)4]$  (IV) to give the trinuclear complex [Rh3( $\mu$ 3-tz)( $\mu$ -Cl)Cl( $\eta$ 3-C3H5)6]. Heterobridged binuclear pyrazolate (pz) complexes of formula [Rh2( $\mu$ -pz)( $\mu$ -X)( $\eta$ 3-C3H5)4] (X = Cl, OH, or N3) have also been prepared from IV and pz followed by addition of KOH or NaN3.

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L9 ANSWER 6 OF 8 CAPLUS COPYRIGHT 2007 ACS on STN
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- AN 1984:630691 CAPLUS
- DN 101:230691
- TI A new approach to the synthesis of cationic, neutral or anionic diarylgold(III) complexes
- AU Uson, R.; Laguna, A.; Arrese, M. L.
- CS Dep. Inorg. Chem., Univ. Zaragoza, Spain
- SO Synthesis and Reactivity in Inorganic and Metal-Organic Chemistry ( 1984), 14(4), 557-67 CODEN: SRIMCN; ISSN: 0094-5714
- DT Journal
- LA English
- The reaction of [Au(C6F5)2Cl]2 or Bu4N[Au(C6F5)2Cl2] with AgClO4 renders stable solns. (in acetone or Et2O) of [Au(C6F5)2S2]+ (S = AcMe, Et2O) which react a) with neutral ligands to give cationic complexes of the type [Au(C6F5)2L2]+ (L = tetrahydrothiophene, PPh2Me; L2 = O-phenylenebis(dimethylarsine), bipy); b) with anionic ligands to give the neutral complexes Au(C6F5)2(acac) of [Au(C6F5)2]2(BiBzIm) (BiBzIm = bibenzimidazolate) or the anionic ones [Au(C6F5)2(CN)2]-. Treatment of the latter with AgClO4 leads to the tetrameric neutral complex [Au(C6F5)2(CN)2Ag]4.
- L9 ANSWER 7 OF 8 CAPLUS COPYRIGHT 2007 ACS on STN
- AN 1981:631085 CAPLUS
- DN 95:231085
- TI Bibenzimidazolate as bridging ligand in bi-, tri- and tetranuclear gold(I) or gold(I) and palladium(II) complexes
- AU Uson, R.; Gimeno, J.; Fornies, J.; Martinez, F.; Fernandez, C.
- CS Dep. Inorg. Chem., Univ. Saragossa, Saragossa, Spain
- SO Inorganica Chimica Acta (1981), 54(3), L95-L96 CODEN: ICHAA3; ISSN: 0020-1693
- DT Journal
- LA English
- AB K or Tl salts of 2,2'-bibenzimidazole (H2Q) in CH2Cl2-MeOH suspension react with AuCl(PPh3) and AuCl2L [L = bis(diphenylphosphino)methane] to give ( $\mu$ -Q) [AuPPh3]2 and ( $\mu$ -Q)Au2L, resp. AuClL' (L' = py, tetrahydrothiophene) react with Q2- to give [Au2( $\mu$ -Q)]x.

 $(\mu-Q)$  [AuPPh3]2 reacts with Au(ClO4)PPh3 to give  $\{(\mu-$ Q) [AuPPh3]3Clo4. ( $\mu$ -Q) Au2L reacts with trans-PdCl2L'2 (L' = tetrahydrothiophene) to give  $Cl2Pd(\mu-Q)[Au2L]$ .  $(\mu-Q)Au2L$  reacts with Au(ClO4)PPh3 in a 1:2 ratio or with  $(\mu-L)[Au(ClO4)]2$  in a 1:1 ratio to give  $\{[Ph3PAu]2\mu-Q[Au2L]\}$  and  $\{\mu-Q[Au2L]2\}$  (ClO4)2.  $(\mu-Q)$ Au2L reacts with  $(\mu-Cl)$ 2Pd2L'2(C6F5)2 (L' = tetrahydrothiophene) or [(μ-Br)2Pd2(C6F5)4]2- to give Cl (C6F5) Pd ( $\mu$ -Q) Au2L or (C6F5) 2Pd ( $\mu$ -Q) Au2L, resp. ANSWER 8 OF 8 CAPLUS COPYRIGHT 2007 ACS on STN 1981:533062 CAPLUS 95:133062 New ways for the preparation of heterocyclic gold(III) complexes Uson, R.; Vicente, J.; Chicote, M. T. Dep. Inorg. Chem., Univ. Zaragoza, Spain Journal of Organometallic Chemistry (1981), 209(2), 271-9 CODEN: JORCAI; ISSN: 0022-328X Journal English Treating 1,1-dimethyl-2,3,4,5-tetraphenylstannacyclopentadiene [(Ph4C4)SnMe2] with AuCl3(Q) (Q = tetrahydrothiophene) gave auracyclopentadiene complexes [(Ph4C4)AuCl(Q)] or [(Ph4C4)AuCl]2, which react with Tl(acac) (acac = acetylacetonato) to give [(Ph4C4)Au(acac)]. Reaction of the last with protonated ligands gave neutral mononuclear or binuclear complexes [(Ph4C4)Au(XL)] (XL is a monoanionic bidentate ligand) or [(Ph4C4)Au(X2L2)Au(Ph4C4)] (X2L2 is a dianionic tetradentate ligand). Treating the acetylacetonate complex with ammonium or pyridinium salts gave mononuclear neutral complexes [(Ph4C4)Au(X)(L)] (X = AcO, CF3CO2; L = NH3, py) or the cationic complexes [(Ph4C4)AuLL1]X when X is an anion with poor coordinating capacity (ClO4, BF4) and the reaction is done in the presence of a neutral ligand (L1 = PPh3). => s 14 and silver 328333 SILVER 36 L4 AND SILVER => s 110 and amidinate 326 AMIDINATE 1 L10 AND AMIDINATE => d bib abs ANSWER 1 OF 1 CAPLUS COPYRIGHT 2007 ACS on STN 1999:757338 CAPLUS 132:72773 Synthesis and Characterization of Functionalized N, N'-Diphenylformamidinate Silver(I) Dimers: Solid-State Structures and Solution Properties Archibald, Stephen J.; Alcock, Nathaniel W.; Busch, Daryle H.; Whitcomb, David R. Department of Chemistry, University of Kansas, Lawrence, KS, 66045, USA Inorganic Chemistry (1999), 38(24), 5571-5578 CODEN: INOCAJ; ISSN: 0020-1669 American Chemical Society Journal English Functionalized N,N'-diphenylformamidines and their deprotonated Ag(I) complexes were synthesized: Ag(I) N,N'-bis(4-alkylphenyl)formamidinate (alkyl = Me, Et, Bu, and n-hexadecyl, 1-4, resp.); Ag(I) N, N'-bis(4-trifluoromethylphenyl)formamidinate (5), Ag(I) N, N'-bis(3-methoxyphenyl) formamidinate (6), Ag(I) N, N'-bis(3-

methylthiophenyl) formamidinate (7), Ag(I) N,N'-bis(2methoxyphenyl) formamidinate (8), Ag(I) N,N'-bis(2-

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methylthiophenyl)formamidinate (9). The effects of increasing the coordination number of the Ag(I) centers by donor substituents on the Ph groups were studied by solution and solid-state studies. Variable-temperature

1H

NMR (223-303 K) for 1-4 shows coupling between the proton attached to the amidinate C and the 107/109Ag centers at room temperature which is unaffected by cooling 2. For the four-coordinate complexes 8 and 9, such coupling is only observed on cooling. Mol. weight measurements recorded in solution by vapor pressure osmometry at 310 K show some aggregation to higher mol. weight species than simple dimers for 1-4 and 6, but 8 and 9 exist as discrete dimeric species. Measurement of thermal stability shows the expected increase in stability with increasing coordination number Compds. 8 and 9 were structurally characterized by x-ray methods. Both show four-coordinate Ag dimers bridged by two amidinate ligands with addnl. longer interactions with the ether oxygens or thioether sulfurs.

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